

Figure 1: Folsom Dam, showing the 4 sluice gates (4 upper and 4 lower tier) that will be replaced. Also see the radial gates near the top of the dam, and a portion of the stilling pond at the bottom of the dam.

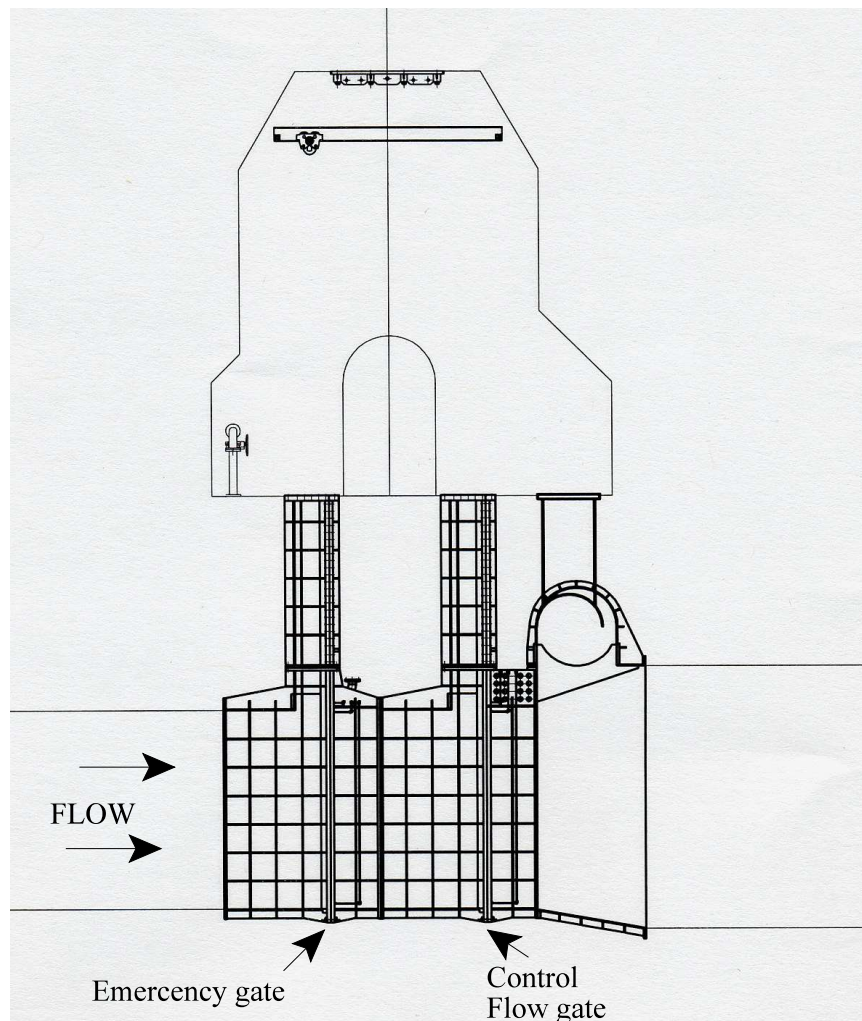


Figure 2: Diagram showing the configuration of the sluice gates, with an emergency gate that is typically left open and the control gate. The gates are housed in a steel body, with a bonnet above it into which the gates are raised. The bonnet cover is just above the floor level in the galley (not shown). The sloped section, just down stream of the gate body, is designed to reduce cavitation. Air is introduced around the water stream here to provide a "cushion" to help dissipate the energy from exploding bubbles.

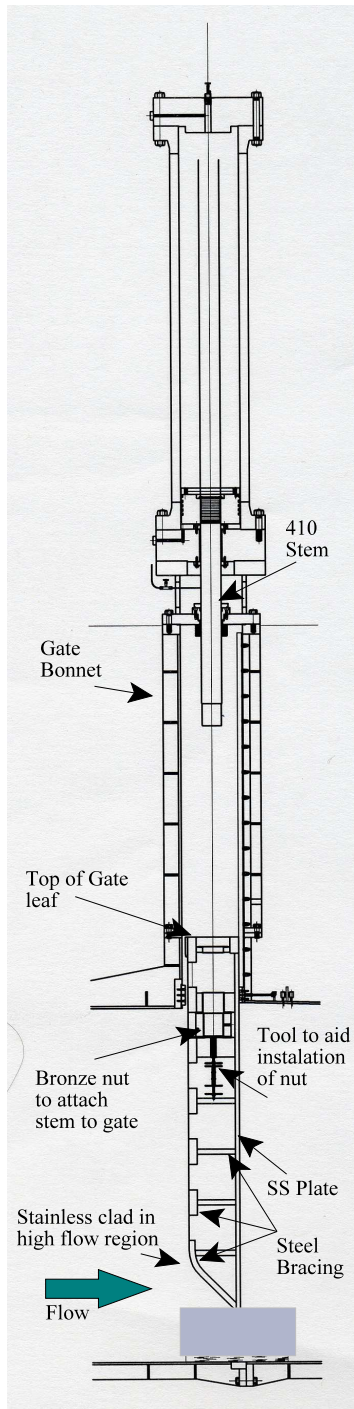


Figure 3: Diagram showing the leaf, bonnet, and piston.

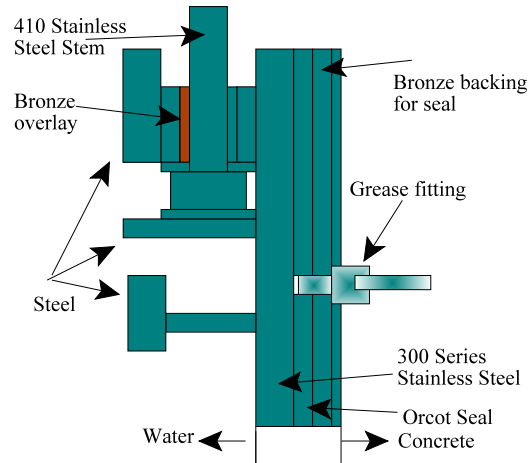


Figure 4: Detail, not to scale, showing materials in leaf and seal. A BOR detail of this region is shown in figure 16.

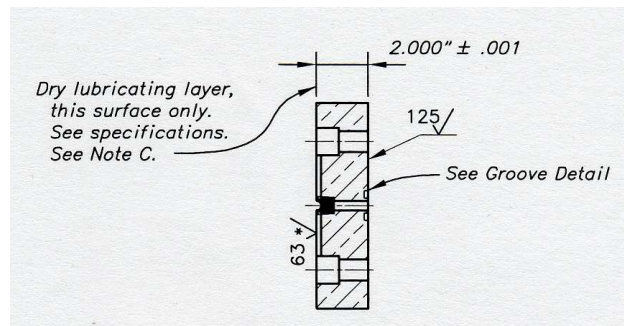


Figure 5: Diagram showing the grease fitting detail, with o-ring, and fasteners holding the seal backing.



Figure 6: Inside gallery showing the tops of the emergency and control bonnets and the hoists.



Figure 7: Inside gallery showing the tops of the hoists.

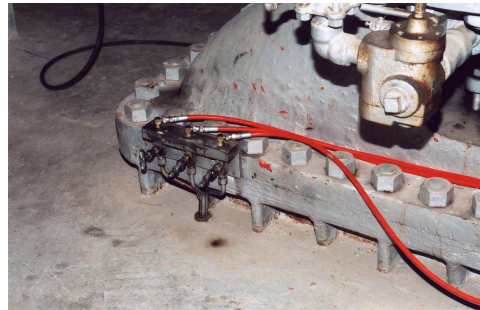


Figure 8: Connections for bonnet cover and grease fittings for the seals.



Figure 9: Bonnet cover.

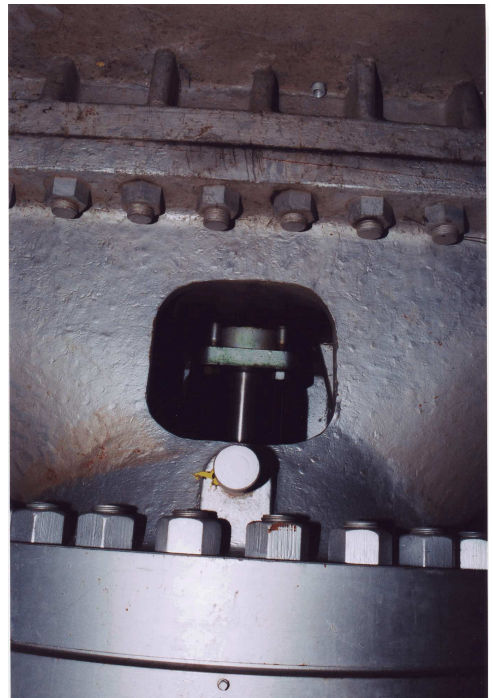


Figure 10: Access hole for the stem glands.

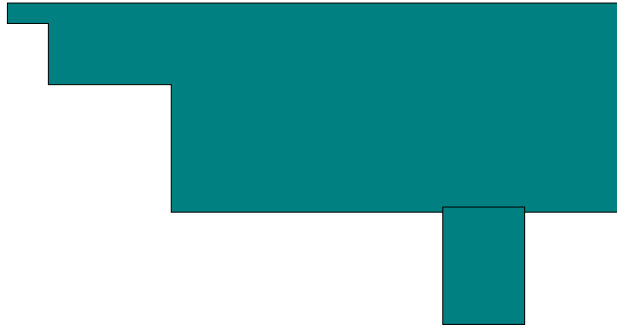


FIGURE 11: Diagram showing the materials and configuration of the leaf seal at the sides of the gates. A BOR detail of this region is shown in figure 15.

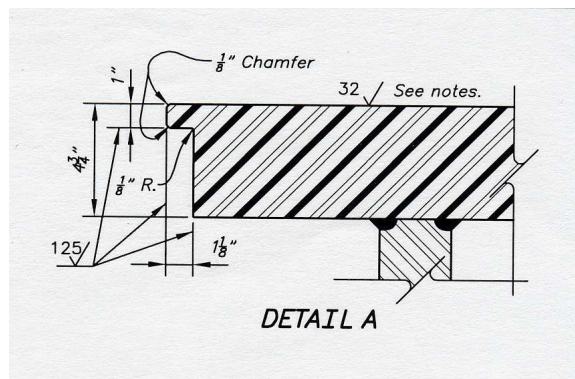


Figure 12: Scale drawing of the sealing edge of the leaf.

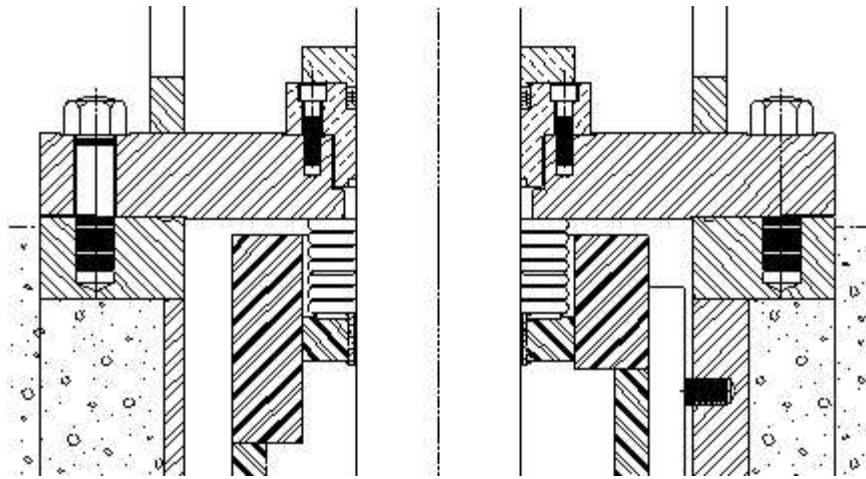


Figure 13: Elevation section through the centerline of the hoist stem as it passes through the bonnet cover and gland assembly. The leaf in all of the figures is shown all stainless as we discussed was a possibility. The multiple ring around the stem shown in section squeezed between bonnet cover and leaf is a neoprene gasket with brass plates included to seal the gland should it have to be removed with water head on the gate. You can see that it is bulged in the view.

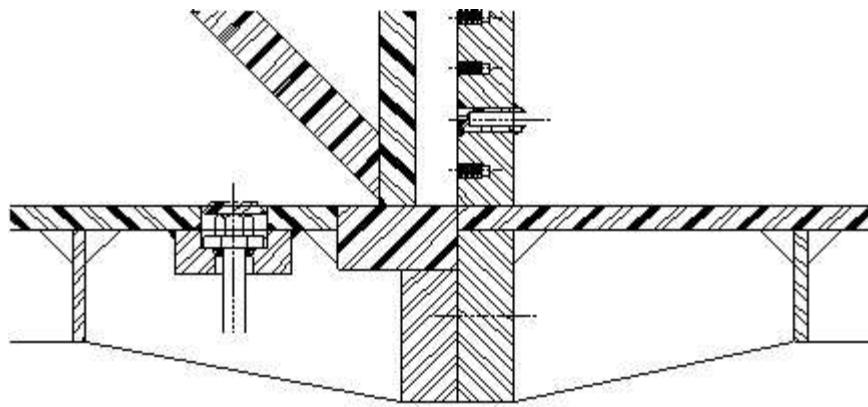


Figure 14: A vertical section through the bottom sealing edge of the leaf. The flow is left to right and the bottom seal or seal clamp is not shown.

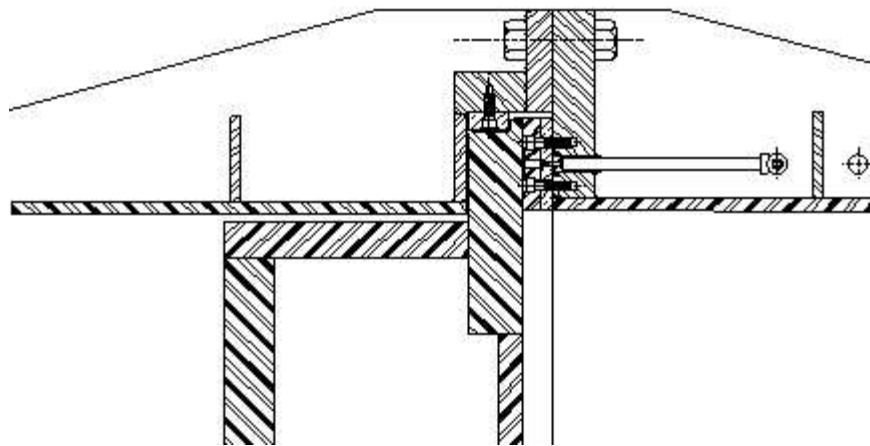


Figure 15: SECT3 is a horizontal section through a gate slot with leaf, seat, and guide all shown and, of course, the upstream and downstream bodies.

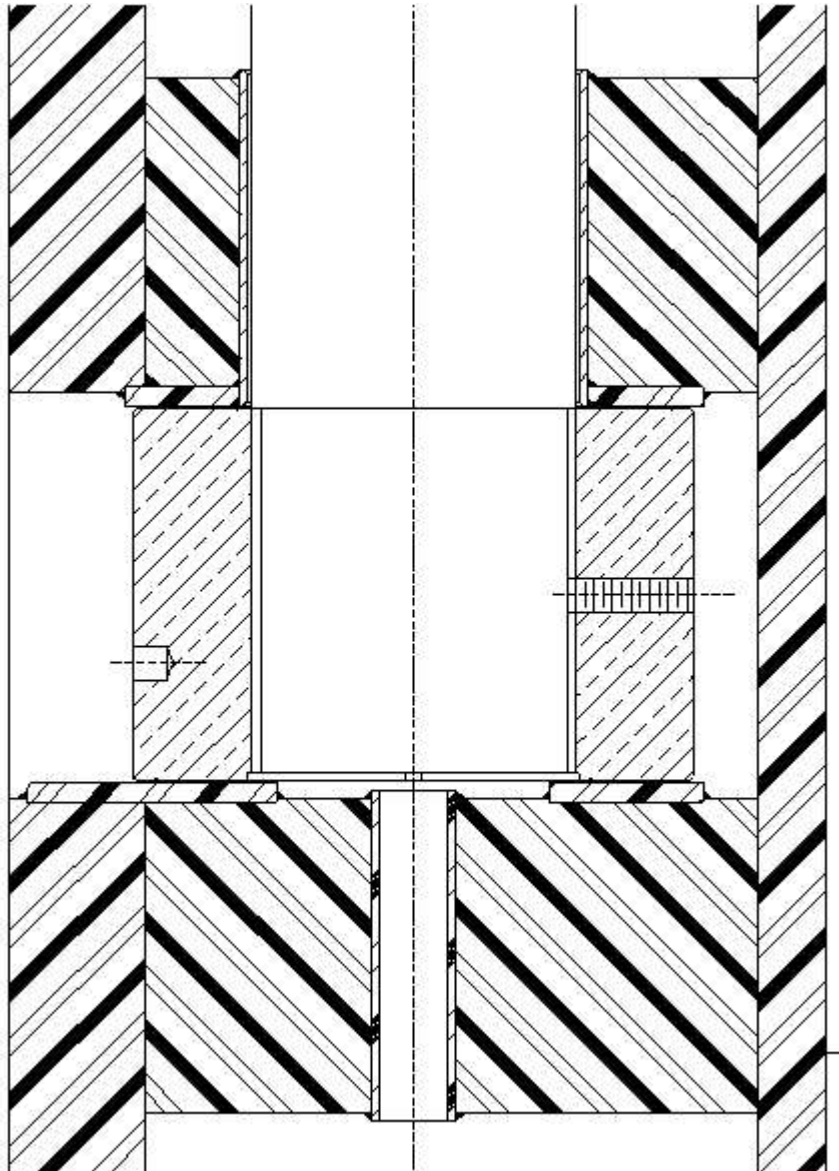


Figure 16: A vertical section through the stem nut in the leaf. The stem is not shown in section so there is no crosshatching on it.